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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,004	03/11/2002	Thomas Paul Feist	08CN8803-26	4708
23413	7590	11/10/2003	EXAMINER BERNATZ, KEVIN M	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			ART UNIT 1773	PAPER NUMBER 10

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/063,004

Applicant(s)

FEIST ET AL.

Examiner

Kevin M Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 78.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Response to Amendment*

1. Amendments to the specification and claims 1, 10, 12, 19, 20, 22, 26, 30, 35 and 38 - 41, filed on September 23, 2003, have been entered in the above-identified application.
2. The basis of the rejections for previously rejected claims 1 – 38 have been changed to utilize references which are deemed to more accurately represent the closest prior art. As such, the following action has been made **NON-FINAL**.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 103*

4. Claims 1 – 15 and 18 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherd et al. ('356) in view of Sandstrom ('461).

Regarding claims 1, 22, 30, 40 and 41, Feuerherd et al. disclose a method for retrieving data from an optical disk, comprising rotating a storage media (*col. 18, line 40 bridging col. 19, line 27*) having a substrate having a thickness of about 0.8 mm to about 2.0 mm (*col. 25, lines 13 – 17*) comprising a single phase plastic resin portion (*col. 3, lines 8 – 26*) and a data layer (*col. 18, lines 40 – 47 and Examples*) disposed on a surface of the substrate, wherein the plastic resin portion comprises poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic

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copolymer(s) and reaction products and combinations comprising at least one of the foregoing styrene materials (*col. 13, line 67 bridging col. 14, line 7 and col. 14, line 66 bridging col. 15, line 9*); wherein information is retrieved from the data layer via an energy field (*col. 18, line 40 bridging col. 19, line 27*).

Feuerherd et al. fail to disclose wherein the energy field is directed at the storage medium such that the energy field is incident upon the data layer before it can be incident upon the substrate (i.e. a near-field or air-incident recording media).

However, Sandstrom teaches that it is known to form recording disks such that they are either substrate-incident (*col. 1, lines 17 – 23*) or air-incident (*col. 1, lines 24 – 36*), but that air-incident recording is preferred because it “has the potential to produce extremely small spot sizes using evanescent coupling and the resulting high numerical aperture, thereby providing increased spatial density and data storage capacity” (*col. 2, lines 12 – 16*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Feuerherd et al. to utilize air-incident recording meeting applicants' claimed method of use limitations as taught by Sandstrom since air-incident recording is preferred because it “has the potential to produce extremely small spot sizes using evanescent coupling and the resulting high numerical aperture, thereby providing increased spatial density and data storage capacity”.

With regard to the transitional phrase “consisting essentially of” in claim 22, the examiner reminds applicants that “[t]he transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do not

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materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original)" (MPEP § 2111.03). The MPEP explicitly states "[f]or search and examination purposes, absent a clear indication in the specification of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising.".

In the instant case, the Examiner deems that the basic and novel characteristics of the claimed invention are a substrate capable of being used for near-field incident recording at a high recording capacity (*specification, Paragraph 0007*).

The MPEP further states "[w]hen an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention". In the court case cited in the MPEP, it should be noted the court's finding that "the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. ***The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics***" [emphasis added] MPEP § 2111.03.

In the instant case, the Examiner notes that applicants' disclosed and claimed invention (e.g. claims 10 – 18) indicate that additional elements included in the substrate composition do not effect the capability of the substrate for use in near-field

air-incident recording at a high recording capacity, i.e. the additional fillers, reinforcements, copolymers, etc. are deemed to not effect the basic and novel characteristics of the claimed invention and are therefore not excluded by the transition phase "consisting essentially of".

Regarding claim 2, Feuerherd et al. disclose providing surface features for servo patterning (*col. 17, lines 3 - 35*).

Regarding claim 3, Feuerherd et al. disclose weight average MW's meeting applicants' claimed range limitations (*col. 14, lines 17 - 30 and col. 15, lines 6 - 14*).

Regarding claims 4 - 6, 23 - 25, 33 and 34, Feuerherd et al. disclose that the poly(arylene ether) is preferably formed of a weight average molecular weight of 35,000 to 45,000 which is deemed to implicitly teach that 0% of the poly(arylene ether) should preferably be under 15,000 molecular weight (*col. 14, lines 23 - 27*).

Regarding claims 7 - 9, Feuerherd et al. disclose relative amounts of poly(arylene ether) and styrene material meeting applicants' relative ratio amounts (*col. 14, lines 8 - 16*).

Regarding claims 10 and 11, Feuerherd et al. disclose styrene copolymers meeting applicants' claimed composition limitations (*col. 14, line 66 bridging col. 15, line 5 and col. 16, lines 3 - 12*). The limitation "prepared by bulk, suspension or emulsion polymerization" is a product-by-process limitation and is not further limiting in so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. ***The patentability of a product does not depend on its method of***

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**production.** If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” [emphasis added] *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP § 2113. Once a product appearing substantially identical is found, the burden shifts to applicant to show an **unobvious** difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

In the instant case, Feuerherd et al. explicitly teach that the styrene materials can be prepared by “known free radical polymerization” or “the conventional known anionic polymerization methods” and does not indicate that using any of the known methods results in a styrene material which is materially different than a styrene material prepared by any other known method.

Regarding claims 12 – 15, 26 – 28, 35 and 36, Feuerherd et al. disclose adding amount of co-monomer meeting applicants’ claimed material and weight percent limitations to styrene copolymers (*col. 15, lines 39 bridging col. 16, line 2 and col. 25, lines 35 - 39*).

Regarding claim 18, Feuerherd et al. disclose additives meeting applicants’ claimed material limitations (*col. 16, lines 17 - 24*).

Regarding claims 19 and 20, Feuerherd et al. disclose mixtures of styrene and styrene copolymers meeting applicants’ claimed weight percent ranges (*col. 15, lines 6 – 14; col. 16, lines 28 – 45; and col. 25, lines 33 - 39*).

Regarding claims 21, 29 and 37, Feuerherd et al. disclose poly(arylene ether) components meeting applicants' claimed intrinsic viscosity values (*col. 11, lines 16 - 18*).

Regarding claims 31 and 32, Sandstrom teach that for air-incident recording it is known to utilize a reflecting layer between the substrate (*Figure 1, layer 18*) and the data layer, which prevents the energy field from being incident on the data layer (claim 32) and reflects part of the energy field back from the data layer (claim 31). It is known in the art that the use of a reflecting layer improves the reflection of the laser beam in optical and magneto-optical disks (*Feuerherd et al. – col. 18, lines 24 – 28*).

Regarding claims 38 and 39, Sandstrom teaches the importance of producing flat, dimensionally stable substrates with the warp, tilt and axial deflection minimized in order to allow the air gap between the flying head and the disk to remain substantially constant, thereby increase recording density, avoid head crashes and improve the read/write capabilities of the disk (*col. 2, line 13 bridging col. 3, line 18; col. 4, lines 3 – 25; and col. 6, lines 49 – 61*). The Examiner deems that it would have been obvious to one having ordinary skill in the art to have minimized the cause effective variable such as the radial tilt through routine experimentation, especially given the teaching in Sandstrom regarding the desire to minimize the tilt and maximize the flatness of the disk to achieve high recording density, reduced head crashes and improved read/write capabilities. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).



5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherd et al. in view of Sandstrom as applied above, and further in view of Landin et al. ('774).

Feuerherd et al. in view of Sandstrom is relied upon as described above.

Regarding claims 16 and 17, none of the above disclose adding fillers meeting applicants' material and/or shape limitations.

However, Landin et al. teach that it is known to add fibrous and/or particulate filler meeting applicants' claimed material and shape limitations in order to control the viscoelastic damping and strain energy ratio of the substrate (*col. 7, line 22 bridging col. 9, line 15*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Feuerherd et al. in view of Sandstrom to use filler meeting applicants' claimed composition and size limitations as taught by Landin et al. in order to control the viscoelastic damping and strain energy ratio of the substrate.

### ***Response to Arguments***

**6. The rejection of claims 4 – 7, 12, 23 – 26, 33 and 34 under 35 U.S.C § 112 – 2<sup>nd</sup> Paragraph**

The above noted rejection has been withdrawn in view of applicant(s) arguments, which have been found persuasive. Specifically, applicant(s) argue that one of ordinary

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skill would readily ascertain the scope covered by "less than about", which is agreed to by the Examiner.

**7. The rejection of claims 1 - 38 under 35 U.S.C § 103 – Funaki et al. in view of various references**

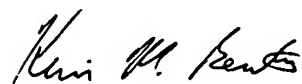
Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Kevin M. Bernatz  
Patent Examiner

November 7, 2003